



**Metro**

Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

213 622 8000 Tel  
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**OPERATIONS COMMITTEE  
MAY 19, 2005**

**SUBJECT: CONTRACT NO. OP39201619, METRO RED LINE VEHICLE UPGRADE,  
ROLL BACK PROTECTION SYSTEM.  
ALSTOM SIGNALING, INC.**

**ACTION: APPROVE CONTRACT AWARD**

**RECOMMENDATION**

Authorize the Chief Executive Officer to award a 24-month firm fixed price contract, Contract No. OP39201619 with Alstom Signaling, Inc to upgrade the existing Roll Back Protection System for all Metro Red Line Vehicles in an amount not to exceed \$1,985,815.

**RATIONALE**

The contractor will upgrade all 104 Metro Red Line vehicles to incorporate an additional safety feature in the Roll Back Protection System. The present Roll Back Protection System measures only the vehicle rolling speed and does not have rolling distance measurement capability. The upgrade will enable the System to measure unintentional vehicle movement distance, after a stop, and call for application of emergency braking, when the vehicle rolls backward or forward excessively.

The scope of the proposed upgrade includes addition of new speed sensors, hardware and software to the existing ATP system. It requires full integration with present circuitry and software. The scope of the work also includes modification and redesign of printed circuit boards, interface with hardware and software logic and re-wiring of parts of the existing ATP printed circuits mounting rack.

The Roll Back Protection System is a subsystem of the train Automatic Train Protection/ Automatic Train Operation (ATP/ATO) signal systems. The ATP/ATO systems control and monitor all vital safety aspects of the train movements and train stopping. The Roll Back System specifically monitors train movement at low speed and at stops. The system detects unintentional train roll back (or roll forward) when the train has come to a stop, and applies emergency braking when necessary. Alstom Signaling Inc. is the supplier of the original ATP/ATO systems. Only Alstom has the required information and the capability, expertise and background information to undertake such a major change to the brake system safety-monitoring device. Based on these facts, Alstom is the sole source for this requirement.

As stated above, the present Roll Back Protection System installed on the vehicles measures only the rolling speed. If the vehicle rolls at above 3 mph, the Roll Back Protection System detects the unintentional movement and calls for emergency braking to be applied.

However, in the present configuration, if the rolling speed remains below 3 mph, the train will continue rolling indefinitely. The proposed upgrade to the present configuration will add the distance measurement feature capability. The unintentional movement of the train will be stopped regardless of rolling speed, once the rolling distance exceeds a preset limit (initially to be set at 20 inches). This upgrade will render the Roll Back Protection System fully compliant with California Public Utilities Commission (CPUC) General Order 127 requirement.

## **FINANCIAL IMPACT**

The life-of-project (LOP) budget for this project was approved by the Board in the FY05 budget process at \$4,311,000. This action is within the approved LOP budget. The FY05 and proposed FY06 funding for this service is included in Cost Center 3920, Wayside Systems, under Project Number 200009, Task 04.11.01, Account 53102 – Acquisition of Equipment.

Since this is a multi-year project, the cost center manager and the Deputy Chief Executive Officer will be accountable for budgeting the project costs in future years consistent with the Board adopted total life-of-project budget.

## **ALTERNATIVES CONSIDERED**

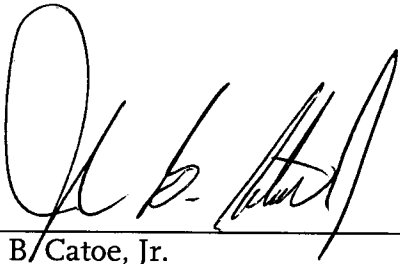
One alternative is to continue operating Metro Red Line vehicles with the present configuration of the Roll Back Protection System. This is not recommended because the train can roll back or roll forward for several feet while the rolling speed remains below 3 mph. Incidents of this nature have occurred at other transit authorities. Most recently, on November 3, 2004, an empty Washington Metro (WMATA) train rolled back into another train full of passengers, injuring at least 20 people and causing extensive damages to both trains.

Another alternative considered was to locate an existing low cost product that could be procured and installed by the staff. This alternative is not recommended because there are no replacement products available in the market that can be procured and installed to vitally integrate with the existing ATP/ATO systems. Any company that would be capable to manufacture such a product would need to obtain all background information from Alstom, and develop a new product, specifically for Metro. Such company further must accept the critical safety liabilities of such an undertaking. Because there would be no after market for such a product, Metro would be required to pay all associated development costs.

## **ATTACHMENTS**

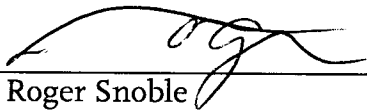
- A. Procurement Summary
- A-1 Procurement History
- A-2 List of Subcontractors

Prepared by: Gerald C. Francis, General Manager, Rail Operations  
Dave J. Kubicek, DEO Rail Operations, Fleet Services  
Tom Butler, Senior Contract Administrator



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John B. Catoe, Jr.  
Deputy Chief Executive Officer



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Roger Snoble  
Chief Executive Officer

**BOARD REPORT ATTACHMENT A  
PROCUREMENT SUMMARY  
METRO RED LINE VEHICLE UPGRADE, ROLL BACK PROTECTION SYSTEM**

1.	Contract Number: OP39201619		
2.	Recommended Vendor: ALSTOM Signaling Inc.		
3.	Cost/Price Analysis Information:		
	A. Bid/Proposed Price: \$2,133,014 (\$1,970,452 plus 8 1/4% LA County sales tax of \$162,562)	Recommended Price: \$1,985,815 (\$1,834,471 plus 8 1/4% LA County sales tax of \$151,344)	
	B. Details of Significant Variances are in Attachment A-1.D		
4.	Contract Type: Firm Fixed Price		
5.	Procurement Dates:		
	A. Issued: 12.13.04		
	B. Advertised: Not Applicable		
	C. Pre-proposal Conference: Not Applicable		
	D. Proposals Due: 1.10.05		
	E. Pre-Qualification Completed: 2.9.05		
	F. Conflict of Interest Form Submitted to Ethics: 4.15.05		
6.	Small Business Participation:		
	A. Bid/Proposal Goal: DBE 5 %	Date Small Business Evaluation Completed: 11.1.04	
	B. Small Business Commitment Details are in Attachment A-2 DBE 7.55 %		
7.	Invitation for Bid/Request for Proposal Data:		
	Notifications sent: 1	Bids/Proposals Picked up: 1	Bids/Proposals Received: 1
8.	Evaluation Information:		
	A. Bidders/Proposers Names:  ALSTOM Signaling Inc.	Bid/Proposal Amount: \$1,970,452	Best and Final Offer Amount: \$1,834,471
	B. Evaluation Methodology Details are in Attachment A-1.C		
9.	Protest Information:		
	A. Protest Period End Date: 5.24.05		
	B. Protest Receipt Date: TBD		
	C. Disposition of Protest Date: TBD		
10.	Contract Administrator: Tom Butler	Telephone Number: 213-922-7312	
11.	Project Manager: Dave J. Kubicek	Telephone Number: 213-922-3340	

**BOARD REPORT ATTACHMENT A-1  
PROCUREMENT HISTORY  
METRO RED LINE VEHICLE UPGRADE, ROLL BACK PROTECTION SYSTEM**

**A. Background on Contractor**

ALSTOM Signaling Inc. (Alstom) is located in Rochester, New York. They are an American subsidiary of ALSTOM, a French company. They have been in business since 1904 and are a major supplier of signaling and communication equipment to railroad and transit agencies. Alstom has provided equipment to transit agencies in Atlanta (MARTA), Philadelphia (SEPTA), New York (NYCT), Washington, D.C. (WMATA) and many others including foreign agencies. Alstom successfully provided the signal system for the Metro Red Line subway cars as a subcontractor to Italian car builder, Breda, who manufactured and delivered the cars to Metro. In addition, about ten years ago they provided signal and control systems for the Metro Red Line as a contractor. Alstom is deemed to be a reliable source based upon Metro's past experience with them.

**B. Procurement Background**

This is a negotiated, non-competitive, sole source procurement.

**C. Evaluation of Proposals**

This procurement is in compliance with Procurement Policies and Procedures and was solicited as a sole source procurement. Alstom, as sole source, submitted a responsive proposal and is determined to be responsible and technically qualified.

Alstom submitted a proposal of \$1,970,452 for providing the upgrade to the vehicles. An Independent Cost Estimate (ICE) prepared by the Estimating Department indicated a price of \$1,668,779. The results of an audit and technical evaluation generally accepted the costs as proposed by Alstom, however, cost reductions were recommended in selected areas of cost, using the ICE as a guideline.

**D. Cost/Price Analysis Explanation of Variances**

The recommended price has been determined to be fair and reasonable based upon cost analysis prepared by the contract administrator. Fact-finding and negotiations held with Alstom discussed the technical and cost portions of the proposal. All cost elements were discussed in details. Negotiations were finalized at a price of \$1,834,471; a reduction of \$134,981. It is based on reduction in Alstom's labor for installation, testing and commissioning. Since this procurement is subject to the Los Angeles County sales tax of 8 ¼%, the recommended amount of \$1,985,815 includes the applicable sales tax amount of \$151,344.

**BOARD REPORT ATTACHMENT A-2  
LIST OF SUBCONTRACTORS**

**METRO RED LINE VEHICLE UPGRADE, ROLL BACK PROTECTION SYSTEM**

**PRIME CONTRACTOR**

ALSTOM Signaling Inc.

**Small (DBE) Business Commitment**

B&C Transit Consultants, Inc. (DBE)  
14674 Doolittle Drive  
San Leandro, CA 94577

**Other Subcontractors**

None

**Total DBE Commitment**

7.55%